REMARKS

Status of the Claims

In the Office Action, claims 1-20 were noted as pending in the application. Claims 1-3, 6-13 and 16-20 stand rejected. Claims 4-5 and 14-15 are objected to.

A. Rejection of Claims 1-22 under 35 U.S.C. § 103(a).

On page 2 of the Office Action, claims 1, 2, 6-12, 16-18 and 20 are rejected under 35 U.S.C. § 103 as being obvious over U.S. Patent Number 6,137,793 to Gorman, *et. al.*, ("Gorman") in view of U.S. Patent Number 5,784,683 to Sistanizadeh, *et. al.* ("Sistanizadeh"). The reasons that the claims patentably distinguish over the reference are addressed below.

B. Summary of Cited References

Before addressing the Examiner's rejections, a brief summary of the cited references is provided.

Gorman

Gorman relates to a multiplexer for multiplexing broadband signals. A Reverse Path Multiplexing (RPM) permits the coupling of a large number of return path (plant) RF ports (return ports) to be coupled to a receiver card in a CMTS. Abstract. One or more upstream traffic schedulers residing within the CMTS schedule upstream signals from cable modems. Id. Knowledge of when one of the modems will transmit is used to open an RF switch in the RPM. Id. Thus, "[k]ey to operation of [the] invention is that one or more upstream traffic schedulers reside within the CMTS [] with the responsibility of scheduling the upstream transmission from cable modems." Col. 3, lines 59-62. Thus, the RPM multiplexes incoming upstream signals according to time-scheduling.

Sistanizadeh

Sistanizadeh relates to a shared communication system serving a number of living units. Common or 'hub' equipment in the system receives multiplexed digitized information signals relating to a plurality of programs, preferably from a broadcast network. The common equipment includes means for processing the digitized information signals to derive separate program signals, each of which contains information relating to a single one of the programs. Lines couple the common equipment to broadband output devices, e.g. television sets, in the living units. The common equipment includes a switch coupled between the means for processing and the lines, for routing selected program signals over the lines to individual living units. The system also includes a hub controller. The hub controller controls the routing functionality of the switch in response to program requests received via the lines. Col. 6, lines 39-54. The digitized signals are broadcast at channel frequencies typically assigned for downstream transport over subscriber lines. Col. 25, lines 1-2.

C. The Claims are not Obvious over the Cited References

Applicant respectfully submits that the subject matter of the claims patentably distinguish over the cited references. Under MPEP § 2142, for an examiner to establish a *prima facie* case of obviousness, "three basic criteria must be met. First, there must be

some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure." If any of these three criteria are not met, the Examiner has not met the burden of establishing a *prima facie* case of obviousness, and the rejection should be withdrawn.

Furthermore, each dependent claim includes all of the limitations of the independent claim from which it depends. If an independent claim is non-obvious under 35 U.S.C. § 103, then any claim depending therefrom is non-obvious. MPEP §2143.03, citing In re Fine, 837 F.2d 1071 (Fed. Cir. 1988). Applicant respectfully submits that the burden of establishing a *prima facie* case of obviousness has not been met.

D. Claims are not obvious over the cited references

Claim 1 claims a multiplexer that interfaces a plurality of broadband signal inputs to a bus. The multiplexer multiplexes signals from the signal inputs according to a frequency allocation association scheme. This association associates each of the signal inputs with an assigned frequency. The feature of multiplexing signals from among the plurality of inputs to the bus according to a frequency allocation scheme associating each of the broadband signals with an assigned frequency is not found in the references, either alone or in combination with one another.

As Examiner stated in the office action, "Gorman is silent on multiplexing broadband signals according to [an] allocated frequency." However, Sistanizadeh does not disclose this claimed element either. As discussed above, Sistanizadeh discloses digital multiplexing of signals. Col. 3, lines 59-60. The type of multiplexing is typically time division multiplexing ("TDM"), and each program stream within a channel has an associated program identification number ("PID"). Col. 12, lines 5-14. After multiplexing, a modulator modulates a digital signal into a "frequency range . . compatible with telephone line transport." Col. 3, lines 28-31. Thus, multiple (often four) programs are contained in a single multiplexed and modulated channel frequency. Col. 12, lines 35-42.

This contrasts with claim 1, where signals present at multiple inputs are multiplexed by assigning (converting) the frequency of the signals present at each input to a frequency included in a block of signals. This assigning of frequency blocks is shown in FIG. 4 of the application. Each incoming fiber carries broadband signals from a node, typically, and is connected to an input at the CMTS, for example. Each input is assigned a frequency selected from a block of signals, where any frequency included in one block is not included in a block associated with another input. Thus, the signals present at each of the optical/electrical inputs 110 can be placed on the bus 128 without interfering with the signals from other inputs. In addition, each of the plurality of receivers 120 is capable of being tuned to any one of the frequencies to which the inputs 110 may be assigned, thus enabling any receiver to tune to the frequency of any of the inputs and receive the corresponding signal(s) from the bus 128.

Therefore, signals from any input can be placed onto the bus and received by any receiver by assigning a frequency to an input and tuning a receiver to that same frequency. This facilitates the function of switching traffic signals at different inputs (typically corresponding to cable plant feeds from different network nodes, as known in the art) to parts within a CMTS, for example, without the need for a mechanical switch having many mechanical inputs and outputs and the multitude of wire/fiber cables that would result therefrom.

Sistanizadeh may indicate multiple receivers tuning to frequencies, but the receivers are end-user receivers. Each receiver in a nursing home living unit, for example, may be tuned to the same frequency. These receivers are not placing received signals onto a common facility, such as the bus recited in the claims. Indeed, a single digital receiver processes each multiplexed channel and a demultiplexer separates out each program from each transport stream contained in the channel. Sistanizadeh Abstract. "A switch routes selected information signals to individual drops or loops going to living units." Id. Therefore, Sistanizadeh teaches away from the claims because it teaches "a switch coupled between the means for processing [the digitally multiplexed signals] and the lines, for routing selected program signals over the lines to individual living units." Col. 6, lines 49-51.

Furthermore, notwithstanding that Sistanizadeh does not teach ". . . multiplexing signals received at each of the broadband signal inputs onto the bus according to a frequency allocation scheme that associates each of the broadband signal inputs with an assigned frequency block," Sistanizadeh relates to a system where a single signal is received and then distributed to multiple end-user receivers. Claim 1 (and claim 11) relates to receiving multiple feeds from network nodes and multiplexing the signals from all the feed inputs onto a single bus, wherein signals corresponding to a given input are converted to a frequency that differs from the frequency assigned to signals from another input. Thus, claim 1, as well as claim 11, is not obvious over Gorman in view of Sistanizadeh.

Moreover, the references do not teach retrieving the signals off the bus by frequency-agile receivers, such as receivers 120 claimed in the claims. By selecting an exclusive frequency from among an exclusive block of frequencies, and assigning the selected frequency to a given input, a tunable receiver can selectively retrieve the signals associated with the frequency from a common bus that may carry other signals at other frequencies. This is because a receiver assigned to an input can be tuned to the same frequency as the selected frequency of that input, to the exclusion of other frequencies. The references do not disclose, either alone, or in combination, the combination of a multiplexer that assigns a frequency from an exclusive block of frequencies to the signals of a given input (from among a plurality of inputs) and places the frequency-assigned signals onto a common bus, and frequency-agile receivers that are each individually tunable to retrieve signals from the common bus corresponding to a the given input. Accordingly, withdrawal of the rejection is respectfully requested.

Regarding claim 11, similar analysis applies. The references do not disclose, either alone or on combination, the elements of the claim. As discussed above, multiplexing signals present at a plurality of broadband signal input to a common bus according to a "frequency allocation scheme that associates each of the broadband signal inputs with a frequency block" is not disclosed in either of the references. Moreover,

tuning at least one of a plurality of receivers that are coupled to and capable of receiving signals from the bus to a frequency that is included within one of the frequency blocks for communication with a data network" is not disclosed in either of the references. Accordingly, the claim is not obvious over either of the references in view of the other, and withdrawal of the rejection is respectfully requested.

Furthermore, since the remaining claims depend from one or the other of the independent claims 1 and 11, they include all of the limitations of the base claim from which they depend. Accordingly, under MPEP §§2142 §2143.03, these dependent claims also patentably distinguish over the references and withdrawal of the rejection is respectfully requested.

SUMMARY

For all the reasons advanced above, Applicant respectfully submits that the application is in condition for allowance and that action is earnestly solicited.

If the Examiner believes that there are any issues that can be resolved by a telephone conference, or that there are any informalities that can be corrected by an Examiner's amendment please contact the undersigned at the mailing address, telephone, facsimile number, or e-mail address indicated below.

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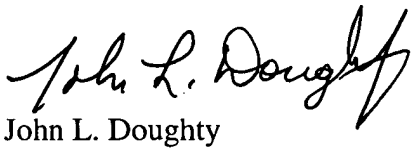

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